

IN THE CLAIMS:

This listing of the claims will replace all prior versions and listing of the claims in the present application:

1-31. (Cancelled)

32. (Currently Amended) A method of improving decreased bone mass in a human comprising: providing a pharmaceutical preparation containing as an active ingredient an osteoclastogenesis inhibitory factor (OCIF) protein encoded by SEQ ID NO:6 and administering the preparation containing said OCIF protein so as to effect the improvement in decreased bone mass.

33. (Currently Amended) A method of using an OCIF protein for improvement of decreased bone mass in a human comprising: providing a pharmaceutical preparation for introducing an osteoclastogenesis inhibitory factor (OCIF) protein encoded by SEQ ID NO:6 into said human, and administering said preparation to said human so as to effect said improvement of said decreased bone mass.

34. (Currently Amended) A method of increasing levels of an osteoclastogenesis inhibitory factor (OCIF) protein in a human comprising administering to said human said OCIF protein encoded by SEQ ID NO:6, wherein such administration results in an increase in the level of said OCIF protein and wherein the increase in said OCIF protein in the human results in increased bone density.

35. (Currently Amended) A method of improving decreased bone mass in a human comprising: providing a pharmaceutical preparation containing as an active ingredient an osteoclastogenesis inhibitory factor (OCIF) protein which is encoded by a nucleic acid molecule that hybridizes with another nucleic acid molecule having SEQ ID NO:6 in a 0.5x SSC solution at 65°C, and administering the preparation containing said OCIF protein so as to effect the improvement in decreased bone mass.

36. (Currently Amended) A method of using an osteoclastogenesis inhibitory factor (OCIF) protein for improvement of decreased bone mass comprising: providing a pharmaceutical preparation for introducing said OCIF protein which is encoded by a nucleic acid molecule that hybridizes with another nucleic acid molecule having SEQ ID NO:6 in a 0.5x SSC solution at 65°C into said a human, and administering said the preparation to said human so as to effect said improvement of said decreased bone mass.

37. (Currently Amended) A method of increasing levels of an osteoclastogenesis inhibitory factor (OCIF) protein in a human comprising: administering to said human said OCIF protein which is encoded by a nucleic acid molecule that hybridizes with another nucleic acid molecule having SEQ ID NO:6 in a 0.5x SSC solution at 65°C, wherein such administration results in an increase in the level of said OCIF protein in a human and wherein the increase in said OCIF protein in the human results in increased bone density.

38. (New) The method of improving bone mass in said human according to claim 32, wherein said pharmaceutical preparation is orally or parenterally administered.

39. (New) The method of using an OCIF protein for improvement of decreased bone mass according to claim 33, wherein said pharmaceutical preparation is orally or parenterally administered.

40. (New) The method of increasing levels of an OCIF protein in said human according to claim 34, wherein said pharmaceutical preparation is orally or parenterally administered.

41. (New) The method of improving decreased bone mass in a human according to claim 35, wherein said OCIF protein comprises the amino acid sequence selected from the group consisting of SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13, and SEQ ID NO: 15.

42. (New) The method of using an OCIF protein for improvement of decreased bone mass according to claim 36, wherein said OCIF protein comprises the amino acid sequence

selected from the group consisting of SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13, and SEQ ID NO: 15.

43. (New) The method of increasing levels of an OCIF protein in a human according to claim 37, wherein said OCIF protein comprises the amino acid sequence selected from the group consisting of SEQ ID NO: 9, SEQ ID NO: 11, SEQ ID NO: 13, and SEQ ID NO: 15.

44. (New) The method of improving bone mass in said human according to claim 35, wherein said pharmaceutical preparation is orally or parenterally administered.

45. (New) The method of using an OCIF protein for improvement of decreased bone mass according to claim 36, wherein said pharmaceutical preparation is orally or parenterally administered.

46. (New) The method of increasing levels of said OCIF protein in said human according to claim 37, wherein said pharmaceutical preparation is orally or parenterally administered.

47. (New) A method of improving decreased bone mass in a human comprising: providing a pharmaceutical preparation containing as an active ingredient an osteoclastogenesis inhibitory factor (OCIF) protein, wherein said OCIF protein has more than 50% of the activity of an OCIF protein encoded by SEQ ID NO: 6 and said OCIF protein is truncated from the C-terminus to amino acid residue 252 as numbered in SEQ ID NO: 4 and administering the preparation containing said OCIF protein so as to effect the improvement in decreased bone mass.

48. (New) A method of improving decreased bone mass in a human comprising: providing a pharmaceutical preparation comprising as an active ingredient an osteoclastogenesis inhibitory factor (OCIF) protein, wherein said OCIF protein has the same amino acid sequence as SEQ ID NO:4 except that the C-terminal is an amino acid selected the region between

isoleucine at position 176 and leucine at position 380 of SEQ ID NO:4, and has a similar activity as the OCIF protein encoded by SEQ ID NO:6.